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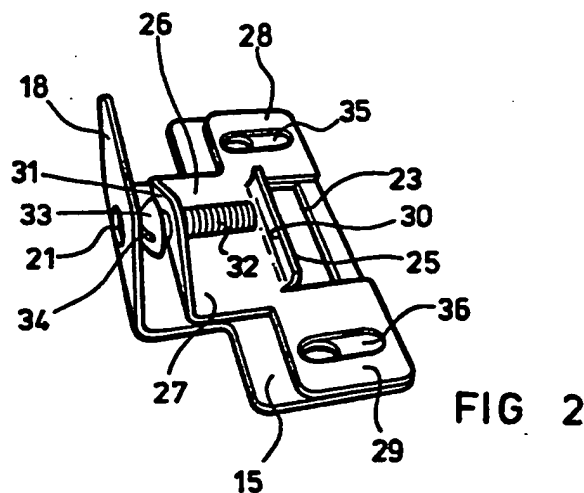
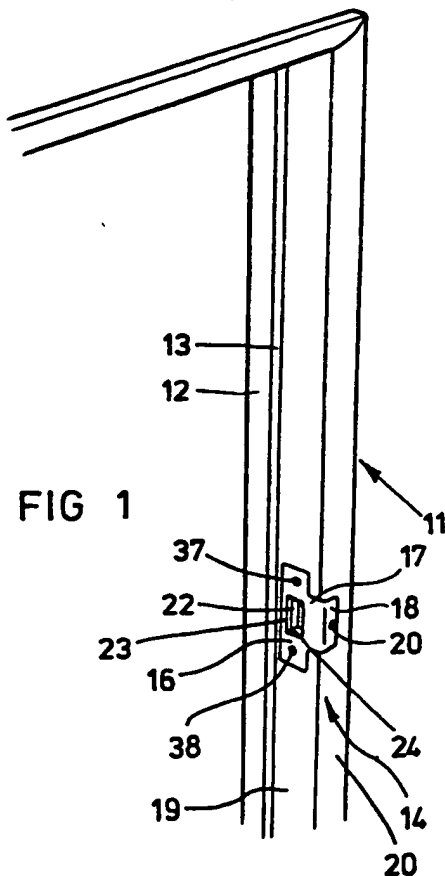
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(54) An adjustable striking plate

(57) An adjustable striking plate assembly for a door latch comprises a first member (15) having a main body portion (16) from which projects a striker tongue (17) and a transverse flange 18 through which an access opening (21) is formed. A latch bolt opening (22) in the main body part (16) is adjustable in size by means of a second member (26), slideable with respect to the first member, by means of an adjusting screw (34) accessible through the access opening (21).



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FIG 2

AN ADJUSTABLE STRIKING PLATE

The present invention relates to an adjustable striking plate for a door latch.

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One problem which is frequently encountered when fitting a door is that of accurately positioning the striking plate which is usually recessed into the door jamb and has an aperture or edge against which the door latch bolt engages when the door is shut. The distance between the edge of the striking plate engaged by the latch bolt and the door stop which defines a shoulder against which the door itself engages when shut must match closely the distance between that face of the door latch bolt which engages the cooperating edge of the striking plate and the face of the door which comes into contact with the door stop.

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Although the thickness of doors for internal and external use are substantially standardised (one standard for internal doors and one for external doors) the precise thickness of a door may vary within a certain manufacturing tolerance, and furthermore may vary from time to time in dependence on the instantaneous moisture content of the door, especially if it is made from soft wood and inadequately sealed (as is often the case with new doors) even though the artisan may successfully gauge the correct

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distance from the latch bolt to the contacting face of the door and position the striking plate so that the appropriate edge is correctly positioned when the door is new, changes to the door's moisture content with time, especially as the door dries out, will result in the dimensions of the door changing, particularly by shrinkage, which will result in an imperfect fit and rattling of the door. If, on the other hand, relative shrinkage of the door jamb in relation to the door takes place it may be that the striking plate, once perfectly fitted, approaches the door stop so that the latch bolt does not properly enter the recess to engage against the locating edge of the striking plate and therefore does not close properly.

This always presupposes, of course, that the artisan has correctly fitted the striking plate on the door jamb correctly assessing the position of the latch bolt in relation to the face of the door. Although carpenters and other artisans may be skilled in making the necessary judgements correctly to fit a door striking plate (and it is a question of judgement since, with the door shut, it is not practically possible to measure the exact position of the door latch bolt) when an amateur seeks to hang a door considerable difficulties are encountered in correctly locating the latching plate and frequently the precise position is only established after several trials, which

involves a considerable amount of repositioning of the latching plate, a process which is made particularly difficult if the precise position is close to the original position due to the overlap of the new and old screw hold positions, and very often the old screw holes must be filled with scrap pieces of wood or matchsticks before new screw holes can be made to secure the striking plate in position. Even when the door has been correctly positioned by an amateur the problems of changing in relative dimensions of the door and door jamb due to variation in atmospheric conditions nevertheless still arises resulting in a need for repositioning of the striking plate.

The present invention seeks to provide means by which these problems can be overcome in a simple and rational manner by providing an adjustable striking plate which can be secured in a single fixed position but nevertheless adjusted to vary the distance between an edge engaged by a striking bolt and the door stop of the door jamb.

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According to one aspect of the present invention, therefore, an adjustable striking plate assembly for a door latch comprises a first member fixedly attachable to a door jamb and a second member having an edge against which the latch bolt engages when the door is shut, the second member being displaceable with respect to the first in a direction

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towards or away from the door stop of the jamb whereby to adjust the position of the said edge and thus the separation between this edge and the door stop.

5 Once the striking plate has been fitted, therefore, there is no necessary for removing it for repositioning since the adjustment of the said second member in order to vary the position of the edge engaged by the door latch bolt can be effected in order to achieve the necessary correct relative
10 position of this.

In a preferred embodiment of the invention the said first member has an opening through which the door latch bolt projects when the door is closed, the said edge of the
15 second member being exposed through the said opening in the first member.

It is, of course, conventional for a striking plate to have a suitably shaped opening to receive the latch bolt of the
20 door, and in the preferred embodiment of the invention the said opening is generally rectangular and the said edge of the second member is generally parallel to the longer edge of the rectangle.

25 Preferably one of the said first and second members has an abutment face engageable by an end of a screw member

threadedly engaged on the other of the said first and second members. The said screw member may be threadedly engaged on the said second member, and the end thereof engageable against the said other member is preferably a
5 head end equipped with means for engaging a tool to turn the screw.

The head end of the screw may be accessible through an opening in the part of the said first member against which
10 the said head end of the screw engages. This is a particularly convenient arrangement since the said head end of the screw is then permanently accessible for adjustment purposes.

15 It is preferred that the first and second members are formed as plates, in which case the second member is preferably held in place, between the first member and the door jamb to which the striking plate assembly is mounted, by the same fixing members as secure the first member in
20 position. Such fixing members are conveniently screws, and in this case the said second member is preferably provided with slots through which the fixing members pass and which permit the said relative movement of the first and second members.

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The head end of the screw, adapted with means for

engagement by a screw-driving tool, may have a conventional screwdriver slot or any other suitable form of engagement means such as a hexagon-section recess, a cruciform slot or even a hexagon head for engagement with a socket on a suitable screw-driving tool or spanner.

One embodiment of the present invention will now be more particularly described, by way of example, with reference to the accompanying drawings, in which:

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Figure 1 is a perspective view of a door jamb fitted with an adjustable striking plate formed as an embodiment of the invention; and

Figure 2 is a perspective view of the striking plate illustrated in Figure 1 shown removed from the door jamb to expose the interior components thereof.

Referring now to the drawings, a conventional door jamb 11 having a door stop 12 in the form of a shouldered projection having a door-engaging face 13 is shown. Such a door jamb is of conventional form. Fitted to the door jamb 11 to receive a latch bolt of a door when closed is a striking plate assembly 14. The striking plate assembly 14 comprises a first member 15 having a generally rectangular main body portion 16 from which laterally projects a striker tongue 17 having a transverse flange 18 which, as

can be seen in Figure 1, passes from the inner face 19 of the door jamb 11 around the edge of the door jamb and onto the front face 20 thereof. The transverse flange 18 has an access opening 21 the function of which will be described
5 in more detail below.

The main body part 16 of the first member 15 has a rectangular opening 22 through which, in use, the door latch bolt projects when the door is closed. The
10 rectangular opening 22 has two parallel longer edges 23, 24 and exposed through the opening thus defined is one edge 25 of a second member 26 located between the first member 15 and the door jamb when the striking plate assembly 14 is fitted to the jamb as illustrated in Figure 1.

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Referring now particularly to Figure 2, the form of the second member 26 can be seen in detail. This comprises a flat generally T-shape body portion having a stem 27 and two lateral arms 28, 29 separated by a rectangular bight
20 the width of which is substantially equal to the length of the parallel longer sides 23, 24 of the rectangular opening 22 in the main body portion 16 of the first member 15 of the striking plate assembly 14. The exposed edge 25 of the second member 26 is formed by a folded lip 30 at the end of
25 the stem portion 27 adjacent the lateral arms 28, 29. At the opposite end of the stem portion 27 is a folded

transverse flange 31 having a threaded aperture (not shown) in which is engaged a threaded screw 32 having an enlarged head 33 with a slot 34 for engagement of a screw driver. The slot 34 of the head 33 is exposed through the opening 20 in the transverse flange 18 of the first member 15.

The lateral arms 28, 29 of the second member 26 have respective elongate slots 35, 36 corresponding in position to respective fixing screw holes 37, 38 in the main body portion 16 of the first member.

When the striking plate assembly 14 is fitted to a door jamb 11 the screw 32 is adjusted so as to be part way along its range of adjustment with the head 33 in contact with the transverse flange 18 of the first member 15. When the assembly is screwed into position the pressure exerted by screws passing through the apertures 37, 38 and the elongate slots 35, 36 holds the second plate 26 in position.

Adjustment of the position of the exposed edge 25 accurately to match the required position for engagement with the door latch bolt is achieved by first closing the door against the door stop 13 and, whilst holding it in this position, inserting a screwdriver through the opening 21 to engage the slot 34 in the head 33 of the screw 32,

and turning this until the edge 25 engages the facing latch bolt surface which can be detected by repeated trial movements of the door. If, on the other hand, when the door is first fitted the edge 25 is too close to the door stop 13 to allow the latch bolt to enter the opening 22, 5 the door is opened again, the screwdriver inserted through the opening 21 to engage the slot 34 and the screw 32 turned clockwise to move it away from the transverse flange 18 by a small distance. The second plate 26 can then be 10 moved by a screwdriver or other tool inserted through the opening 22 and pressed against the edge 25 to a position where the latch bolt is allowed to enter the aperture 22 when the door is closed against the door stop 13.

Adjustment of the position of the edge 25 then follows in 15 exactly the same way as explained hereinbefore. Since the forces exerted on the second plate 26 in use of the striking plate assembly 14 are only exerted by pressure of the latch bolt in the door-opening direction it is unnecessary to provide for positive adjustment of the plate 20 in both directions although, of course, this could be achieved by engaging the screw in a threaded opening in the transverse flange 18 and providing the screw 32 with two sections of opposite hand in the manner of a bottle screw.

The described embodiment is considered, however, to have 25 the required degree of simplicity for economical production whilst at the same time offering a high degree of

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versatility and a wide range of adjustment at the lowest economic cost.

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CLAIMS

1. An adjustable striking plate assembly for a door latch comprising a first member fixedly attachable to a door jamb and a second member having an edge against which the latch bolt engages when the door is shut, the second member being displaceable with respect to the first in a direction towards or away from the door stop of the jamb whereby to adjust the position of the said edge and thus the separation between this edge and the door stop.
2. An adjustable striking plate assembly as claimed in Claim 1, in which the said first member has an opening through which the door latch bolt projects when the door is closed, the said edge of the second member being exposed through the said opening in the first member.
3. An adjustable striking plate assembly as claimed in Claim 2, in which the said opening is generally rectangular and the said edge of the second member is generally parallel to the longer edge of the rectangle.
4. An adjustable striking plate assembly as claimed in any preceding claim in which one of the said first and second members has an abutment face engageable by an end of a screw member threadedly engaged on the other of the said first and second members.

5. An adjustable striking plate assembly as claimed in Claim 4, in which the said screw member is threadedly engaged on the said second member and the end thereof engageable against the said other member is a head end thereof equipped with means for engaging a tool to turn the screw.
6. An adjustable striking plate assembly as claimed in Claim 5, in which the head end of the screw is accessible through an opening in the part of the said first member against which the said head end of the screw engages.
7. An adjustable striking plate assembly as claimed in Claim 6, in which the first and second members are formed as plates and the second member is held in place, between the first member and a door jamb to which the striking plate assembly is mounted, by the same fixing members as secure the first member in position.
8. An adjustable striking plate assembly as claimed in Claim 7, in which the second member has slots through which the fixing members pass and which permit the said relative movement of the first and second members.
9. An adjustable striking plate assembly as claimed in any of Claims 5 to 8, in which the said tool is a screw

driver and the said coupling is a slot, hexagon slot,
cruciform slot or other form of engagement.

10. An adjustable striking plate assembly substantially
5 as hereinbefore described with reference to, and as shown
in, the accompanying drawings.

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